

ANSWERING REVIEWERS



May 25, 2016

Dear Editor,

Please find enclosed the edited manuscript in word format (file name: 26006-Revised manuscript.doc).

Title: The clinical risk assessment instruments for screening bone mineral density in a Mediterranean population

Author: Sotirios Christodoulou, Georgios I. Drosos, Athanasios Ververidis, Antonios Galanos, George Anastassopoulos, Konstantinos Kazakos

Name of Journal: *World Journal of Orthopedics*

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The manuscript has been revised according to the suggestions of reviewers:

Reviewer 3068027

This is an interesting paper with regards to the argument of screening tools for osteoporosis and identification of the patients that need to have DXA measurement. Furthermore, it adds information missing in this area of the Mediterranean Sea. It could be considered for publication but there are points that need to be clarified:

1. Please state type of study (i.e. cross sectional..)

Reply: This was addressed. The words “cross sectional study concerning a” were added in the MATERIAL AND METHODS/Patients section.

2. What were your exclusion/inclusion criteria?

Reply: This was addressed.

The following was added in the MATERIAL AND METHODS/Patients section.

“In this study were included women in postmenopausal status (>12 months since last menstrual period) and those that were receiving medication for either prevention or treatment of a diagnosed osteoporosis were excluded.”

3. How many DXA scanners were used for measuring 1000 patients? Can you comment on the intrasite intersite measurement errors?

Reply: All measurements were done in the same scanner. I am afraid that we can't comment on the intrasite - intersite measurement errors.

4. A table to summarize all criteria described for clinical decision rules to predict low bone mineral density would be useful

Reply: This was addressed.

Table 6 was added at the end of the manuscript.

5. Please mention all osteoporotic risk factors assessed in detail.

Reply: The osteoporotic risk factors were several (according to the protocol of our unit for patients who undergo DEXA scanning) and most of them are listed in the last paragraph of the MATERIAL AND METHODS/Patients section. Nevertheless only those described in the Table 6 (see the previous comment) were used for this study.

6. It would be interesting to see positive and negative predictive values for the tools used.

Reply: This was addressed.

The following was added in the STATISTICAL ANALYSIS section.

“We also calculated the positive predictive value (PPV) and negative predictive value (NPV) to evaluate the external validity of each tool. The PPV and NPV represent the proportion of women who tested positive or negative (as classified by the four tools) and who truly had, or did not have, BMD below the T-score threshold being tested, respectively.”

And the corresponding changes (columns PPV and NPV added) in Table 1 and 2.

7. Some more literature on the use of these tools worldwide would be useful (i.e. a recent systematic review of the performance of the Osteoporosis Self-Assessment Tool (OST) suggests clinical decision tools may be more useful in identifying a subset of patients who are at low risk of osteoporosis and do not need formal bone mineral density assessment.) REF: Rud B, Hilden J, Hyldstrup L, Hrobjartsson A. Performance of the Osteoporosis Self-Assessment Tool in ruling out low bone mineral density in postmenopausal women: a systematic review. *Osteoporosis International*. 2007; 18: 1177–87.

Reply: This was addressed.

The following was added in the DISCUSSION section.

“A systematic review of the performance of the Osteoporosis Self-Assessment Tool (OST) suggests clinical decision tools may be more useful in identifying a subset of patients who are at low risk of osteoporosis and do not need formal bone mineral density assessment [19], while a more recent comparative systematic review of accuracy found that comparing OST to SCORE and ORAI the results were similar [20].”

8. Please check for language errors. The description of the results is poor and difficult for the reader to understand.

Reply: This was addressed.

Reviewer 2444802

This paper is of interest to WJOP readers and offers some nice data comparisons of osteoporosis sufferers and comparison of predictive tools.

1. The authors should explain in the introduction why BMD measurement of all women is not feasible for most populations. Is this because of availability of expensive kit?

Reply: This was addressed.

The following was added in the INTRODUCTION section.

“because of the existing availability of scanners, lack of awareness or lack of widely accepted guidelines.”

2. It is presumed (but should be stated) that actual osteoporosis confirmation comes from BMD measurements that the 1000 women had and this was then tracked back to the other analytical tools used?

Reply: This was addressed.

The following was added in the MATERIAL AND METHODS/Patients section

“All women underwent DEXA screening between October 1, 2012 and October 1, 2014. The actual osteoporosis confirmation comes from BMD measurements and this was then tracked back to the other analytical tools used.”

3. It would be beneficial if the authors could do further analysis of the data comparing the patient profile e.g. body mass index (BMI) or if patient is smoker etc with incidence of osteoporosis and also if the same recommended predictive tool for each profile set of women remains the same. It maybe that a tighter fit with low BMI and high BMI patients may be found with different tools.

Reply: We agree with the reviewer.

BUT according to our statisticians this could be another study as it is a large body of statistical work.

Thank you again for considering our manuscript for publication in the *World Journal of Orthopaedics*.

Sincerely yours,



Georgios I. Drosos, MD, PhD

Associate Professor of Orthopaedics

Department of Orthopaedic Surgery

Medical School, Democritus University of Thrace

University General Hospital of Alexandroupolis

Dragana 68100 Alexandroupolis, Greece

Email: drosos@otenet.gr

Telephone: +30-6944-380694, Fax: +30-25513-30339